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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,788	03/19/2004	Yoshiyuki Suzuri	KOT-0093	7727

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CANTOR COLBURN LLP  
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EXAMINER

GARRETT, DAWN L

ART UNIT PAPER NUMBER

1774

DATE MAILED: 08/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/804,788

Applicant(s)

SUZURI ET AL.

Examiner

Dawn Garrett

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) 14-17, 19, 20, 22-26, 28, 30-34 and 48-51 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 18, 21, 27, 29, 35-47 and 52-56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. This Office action is responsive to the response to the election of species requirement received July 12, 2006. Applicant elected Formula 11 as a single carbazole species where  $R_{1001}$  through  $R_{1013}$  are alkyl groups and Formula 4-1 or 4-2 where  $Ar_{801}$  through  $Ar_{803}$  and  $R_{801}$  through  $R_{827}$  represent alkyl groups. Applicant listed claims 1-13, 18, 21, 27, 29, 35-47 and 52-56 as reading upon the elected claims.

Applicant stated there appears to be no serious burden on the examiner due to the "small number of claims". The examiner maintains the species are distinct and require separate search. If applicant is arguing that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or *clearly admit* on the record that this was intended, and the election requirement will be withdrawn. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission *may be used in a rejection under 35 U.S.C. 103(a)* of the other invention.

2. The examiner has determined that both specific species selected by applicant with full substitution with alkyl groups are allowable species. Accordingly, the examiner has selected the next species for consideration. The species now under consideration are the following:

Formula 11 wherein  $R_{1003}$  is substituted with a heterocyclic group and  $R_{1011}$  is substituted with an aromatic group. The remainder of the R groups represent hydrogen atoms.

Formula 4-2 wherein  $R_{819}$ ,  $R_{826}$  and  $R_{823}$  are phenyl groups. The remainder of the R groups on Formula 4-2 are represented by hydrogen atoms.

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Claims 1-13, 18, 21, 27, 29, 35-47 and 52-56 read upon the elected claims and are under consideration. Claims 14-17, 19, 20, 22-26, 28, 30-34 and 48-51 are withdrawn as non-elected.

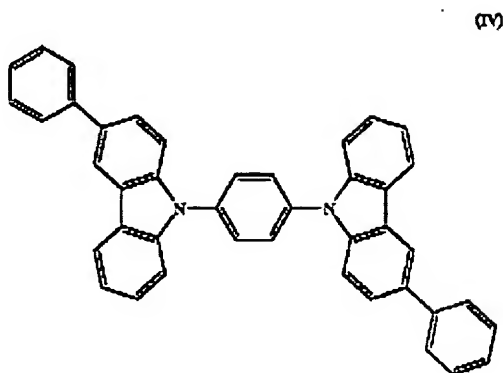
***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-13, 18, 21, 27, 29, 35-47 and 52-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mishima (US 200/0053462 A1) in view of Thoms et al. (US 2003/0205696 A1) and Shirota et al. (JP 2001-316338). Mishima teaches an electroluminescent device comprising a light emitting layer with a carbazole host material and a phosphorescent emitter guest material (see abstract and paragraph 36, sixth line, and par. 15-17). The devices disclosed by Mishima further comprise a hole injecting/transporting layer comprising aromatic tertiary amine derivatives (see par. 35, first line through twelfth line). Mishima fails to teach specifically the carbazole host species under consideration. Thoms et al. teaches in analogous art carbazole host materials for a light emitting layer of an organic electroluminescent device according to the species under consideration (see par. 19, page 2):

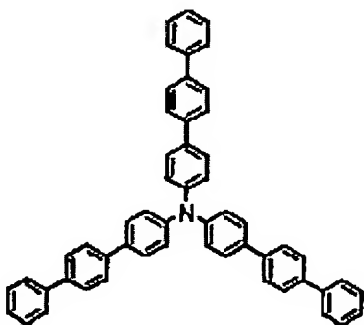
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Mishima further fails to teach specifically the aromatic tertiary amine derivative currently under consideration. Shirota teaches in analogous art electroluminescent elements comprising a hole injecting layer adjacent the luminescent/light emitting layer comprising aromatic tertiary amine compounds such as the following according to the species under consideration (see par. 43):

【0043】

【化14】



It would have been obvious to one of ordinary skill in the art to have selected the carbazole derivative according to Thoms et al. for the host compound and the aromatic tertiary amine compound taught by Shirota for the tertiary aromatic amine compound, because Mishima generally teaches that such compounds are suitable for the Mishima device as host and hole injecting/transporting compounds respectively.

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With regard to claims 6 and 40, Mishima teaches both a hole injecting and hole transporting layer (two layers) may be included in the device (see par. 21 and par. 35) per the requirement of a second hole transporting layer. Mishima teaches porphyrin-based compounds, aromatic tertiary amines, and styrylamines (see par. 35), which are all listed as preferred materials for the second “hole transporting layer” by applicant in the specification.

With regard to claims 7 and 41, Mishima fails to teach specifically the thickness of the hole transporting/injecting layer adjacent the light emitting layer. Shirota teaches in analogous art a hole transportation layer for an electroluminescent device with a thickness of 200 angstroms (20nm) (see par. 57, Example). It would have been obvious to one of ordinary skill in the art to have formed a hole transporting/injecting layer adjacent the light emitting at a thickness of 20nm, because Shirota teaches such a thickness for the hole transporting/injecting layer adjacent the light emitting layer is suitable and functional for an electroluminescent device. One would expect such a thickness for the layer to be similarly useful in the Mishima device.

Since the references teach the same compounds as required by applicant in the claims, the property limitations of claims 1-5, 9-11, 36-39, and 43-45 are considered to be met by the references.

Claims 52 and 53 are product-by-process limitations. See M.P.E.P. § 2113:

“Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.”

*In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985)...

“The Patent Office bears a lesser burden proof in making

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out a case of *prima facie* obviousness for product-by-process claims because of their peculiar nature” than when a product is claimed in the conventional fashion.

*In re Fessman*, 180 USPQ 324, 326 (CCPA 1974).

Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983).

With regard to claim 55, Mishima discloses the light emitting device may be part of an illumination light source (see paragraph 1).

5. Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mishima (US 200/0053462 A1) in view of Thoms et al. (US 2003/0205696 A1) and Shirota et al. (JP 2001-316338) in further view of Ogo et al. (US 6,608,748). The rejection claims 1 and 55 are relied upon as set forth above. While Mishima discloses the light emitting device may be part of an illumination light source (see paragraph 1), Mishima fails to mention specifically the illuminator may be used with a liquid crystal element. Ogo et al. teaches in analogous art the use of an electroluminescent illuminator with a liquid crystal element to form a display (see Figures and col. 5, lines 40-49). It would have been obvious to one of ordinary skill in the art to have combined a liquid crystal element with the device taught by Mishima in view of Thoms and Shirota, because Ogo et al. teaches an electroluminescent illuminator may be used with a liquid crystal element to form a quality display device.

### ***Conclusion***


6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dawn Garrett whose telephone number is (571) 272-1523. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached at (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Dawn Garrett  
Primary Examiner  
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